Ohio Achievement Test
Grade 6 Mathematics

May 2007

Answer Key
and
Scoring Guidelines

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Answer Key
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Item No.	Type	Content Standard	Content Standard Benchmark	Key
1	Multiple Choice	Geometry and Spatial Sense	D	A
2	Multiple Choice	Number, Number Sense and Operations	G	B
3	Multiple Choice	Patterns, Functions, and Algebra	C	C
4	Multiple Choice	Data Analysis and Probability	E	D
5	Multiple Choice	Measurement	C	D
6	Short Answer	Patterns, Functions, and Algebra	K	Not for Public Release
7	Multiple Choice	Number, Number Sense and Operations	D	B
8	Multiple Choice	Patterns, Functions, and Algebra	H	Not for Public Release
9	Multiple Choice	Measurement	F	Not for Public Release
10	Multiple Choice	Data Analysis and Probability	K	Not for Public Release
11	Extended Response	Number, Number Sense and Operations	I	4 pt rubric
12	Multiple Choice	Geometry and Spatial Sense	A	D
13	Multiple Choice	Patterns, Functions, and Algebra	E	D
14	Multiple Choice	Data Analysis and Probability	A	Not for Public Release
15	Multiple Choice	Number, Number Sense and Operations	I	B
16	Short Answer	Measurement	E	Not for Public Release
17	Multiple Choice	Geometry and Spatial Sense	F	Not for Public Release
18	Multiple Choice	Number, Number Sense, and Operations	D	Not for Public Release
19	Multiple Choice	Patterns, Functions, and Algebra	J	Not for Public Release
20	Multiple Choice	Measurement	F	Not for Public Release
21	Extended Response	Data Analysis and Probability	E; G;	Not for Public Release
22 – 27	**Field test questions not used in student score**			
28	Multiple Choice	Patterns, Functions, and Algebra	K	Not for Public Release
29	Multiple Choice	Geometry and Spatial Sense	D	Not for Public Release
30	Multiple Choice	Measurement	C	Not for Public Release
31	Short Answer	Patterns, Functions, and Algebra	A	2 pt rubric
32	Multiple Choice	Number, Number Sense, and Operations	I	Not for Public Release
33	Multiple Choice	Geometry and Spatial Sense	I	Not for Public Release
34	Multiple Choice	Measurement	G	B
35	Multiple Choice	Data Analysis and Probability	F	C
36	Short Answer	Number, Number Sense, and Operations	H	Not for Public Release
37	Multiple Choice	Patterns, Functions, and Algebra	G	Not for Public Release
38	Multiple Choice	Geometry and Spatial Sense	A	C
39	Multiple Choice	Data Analysis and Probability	G	C
40	Multiple Choice	Number, Number Sense, and Operations	I	Not for Public Release
41	Short Answer	Geometry and Spatial Sense	H	2 pt rubric
42	Multiple Choice	Patterns, Functions, and Algebra	L	B
43	Multiple Choice	Measurement	F	B
44	Multiple Choice	Number, Number Sense, and Operations	I	Not for Public Release
45	Multiple Choice	Geometry and Spatial Sense	J	C

Limited = 0-13; Basic = 14-19; Proficient = 20-28; Accelerated = 29-34; Advanced = 35-50
Multiple Choice = 1 point; Short Answer = 2 points; Extended Response = 4 points

11. Jared wants to save $100 to buy a tennis racket. He saves $8 each week, and his mother gives him an extra $0.25 for each dollar he saves.

In your **Answer Document**, determine the number of weeks it will take Jared to save $100. Show your work or explain how you found the number of weeks. (**4 points**)

Scoring Guidelines

<table>
<tr><th>Points</th><th>Student Response</th></tr>
<tr><td>4 point</td><td>The focus of this task is using a strategy to solve a multi-step problem. The response provides the number of weeks to save $100 with supporting work or an adequate explanation.

NOTE: A table and a determination that it takes 10 weeks to reach $100 is adequate.

Exemplar Response:
• $8.00 + (8 × $0.25) = Jared's weekly savings. When I solved this equation, I found out that Jared saves $10.00 a week.

<table>
<tr><td>Week 1</td><td>$10</td></tr>
<tr><td>Week 2</td><td>$20</td></tr>
<tr><td>Week 3</td><td>$30</td></tr>
<tr><td>Week 4</td><td>$40</td></tr>
<tr><td>Week 5</td><td>$50</td></tr>
<tr><td>Week 6</td><td>$60</td></tr>
<tr><td>Week 7</td><td>$70</td></tr>
<tr><td>Week 8</td><td>$80</td></tr>
<tr><td>Week 9</td><td>$90</td></tr>
<tr><td>Week 10</td><td>$100</td></tr>
</table>

If he saves $10.00 every week for 10 weeks, he will have $100.
• Jared earns $8.00 a week, and his mother gives him 8 × $0.25, or $2.00 a week. His total is $10.00 a week. $100 ÷ $10 = 10 so it will take him 10 weeks.</td></tr>
<tr><td>3 point</td><td>The response provides evidence of using a strategy to solve a multi-step problem to determine when a goal will be met; however, the solution may contain a slight error, a flaw or a vague explanation.

Sample Response:
For example, the response may:
• Provide a correct method to determine the amount of money he saves but shows an error in calculation and this error is continued through an otherwise correct method to determine the number of weeks it takes to save $100.</td></tr>
<tr><td>2 point</td><td>The response provides partial evidence of using a strategy to solve a multi-step problem to determine when a goal will be met; however, the solution is incomplete and/or contains minor flaws.

Sample Response:
For example, the response may:
• State the correct answer without work or explanation.
• State that he saves $8 each week, and provide calculations that use this value to calculate that it will take twelve or thirteen weeks to save $100.
• Miscalculates savings as $8.25 each week up to $100.</td></tr>
</table>

1 point	The response provides minimal evidence of using a strategy to solve a multi-step problem to determine when a goal will be met. The response has major flaws and errors in reasoning. **Sample Response:** For example, the response may: • State that he saves $10 each week.
0 point	The response provides inadequate evidence of using a strategy to solve a multi-step problem to determine when a goal will be met. The response provides an explanation with major flaws and errors of reasoning. **Sample Response**: The response may: • State that Jared saves $8.25 a week. • Restate the information provided in the item. • Be blank or state irrelevant information.

31. A pattern is shown.

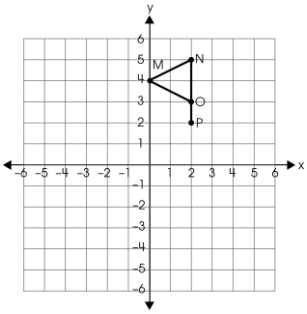
1, 4, 13, 40, 121

In your **Answer Document**, describe the rule for the pattern and find the next term. Show how you found the next term in the pattern. (**2 points**)

Scoring Guidelines

Points	Student Response
2 point	The focus of this task is using words or symbols to describe the rule for a pattern and finding the next term in the pattern. The response provides an adequate description of the rule for the pattern and correctly finds the next term with adequate supporting work. **Exemplar Response:** • To find the next term, triple the previous number and add 1. The sixth term is 364 since 3 × 121 + 1 = 364. • 3 times the previous number plus 13 × 121 + 1 = 364 • $3n+1$, where n is the previous number, 3(121) + 1 = 364
1 point	The response shows partial evidence of using words or symbols to describe the rule for a pattern and finding the next term in the pattern; however, the solution may be incomplete or slightly flawed. **Sample Response**: The response may: • Provide an adequate description of the rule for the pattern but fail to find the next number. • Provide the next number in the pattern with supporting work but fail to describe the rule for the pattern. • Provide an adequate rule for the pattern and the correct next term but not show work.
0 point	The response provides inadequate evidence of using words or symbols to describe the rule for a pattern and finding the next term in the pattern. The response provides an explanation with major flaws and errors of reasoning. **Sample Response**: The response may: • Only state 364. • Restate the information provided in the item. • Be blank or give irrelevant information.

41. Kate drew a triangular flag in the coordinate plane as shown.



Kate then reflected the flag over the *x*-axis.

In your **Answer Document**, give the coordinates of the three vertices of the triangle and the coordinates of the endpoint of the new flag after it has been reflected over the *x*-axis. (**2 points**)

Scoring Guidelines

Points	Student Response
2 point	The focus of this task is providing the coordinates of the vertices of a two-dimensional shape after a transformation. The response provides the accurate coordinates of the three vertices and the endpoint of the reflected flag. **Exemplar Response:** M'(0, −4), N'(2, −5), O'(2, −3), P'(2, −2) **NOTE**: Coordinates may not have letter names.
1 point	The response shows partial evidence of providing the coordinates of the vertices of a two-dimensional shape after a transformation; however, the solution may be incomplete or slightly flawed. **Sample Response**: The response may: • Provide three out of four correct coordinates. • Provide coordinates of the flag reflected across the *y*-axis: N'(−2, 5), O'(−2, 3), M'(0, 4), P'(−2, 2).
0 point	The response provides inadequate evidence of providing the coordinates of the vertices of a two-dimensional shape after a transformation. The response provides an explanation with major flaws and errors of reasoning. **Sample Response**: The response may: • Provide two or more incorrect coordinates. • Restate the information provided in the item. • Be blank or give irrelevant information.